MEMORANDUM OF AGREEMENT
BETWEEN THE U.S. ARMY CORPS OF ENGINEERS,
THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND
THE U.S. FISH AND WILDLIFE SERVICE CONCERNING
THE YAZOO BACKWATER WATER MANAGEMENT PLAN
COMPENSATORY MITIGATION PLAN

November 25, 2024

I. Introduction

a. Authority and Purpose

The Yazoo Basin, Yazoo Backwater, Mississippi Project was authorized by Section 3 of the *Flood Control Act* of 1941 and subsequently amended by the *Flood Control Acts* of 1944 and 1965 to provide flood protection to five subareas of the Yazoo Backwater Area. The authorized work includes levees, water control structures, a connecting channel, and pump stations. Much of this work was completed in the 1970s. The Yazoo Backwater Area Water Management Project includes the remaining pump station and additional features.

The U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service enter into this Memorandum of Agreement to establish procedures regarding efficient and effective coordination in the development, review, approval and oversight of each compensatory mitigation component for the Project.[1] The environmental impacts and benefits of the Project are evaluated in its Final Environmental Impact Statement. The FEIS for the Project also includes proposed measures to compensate for unavoidable impacts to wetlands and other aquatic resources, as well as terrestrial and aquatic species.

The agencies have entered into this MOA in light of the nationally significant natural resources and species anticipated to be impacted by the proposed Project, and the complexity of required compensatory mitigation. Given the nature and scope of these impacts and in accordance with the *Clean Water Act*, proposed work will not commence in waters of the United States until the USACE has obtained concurrence from the EPA on the mitigation plan for each compensatory mitigation component and all in-lieu fee program/mitigation bank credits have been purchased and/or compensatory mitigation sites have been secured (e.g., acquired via fee title acquisition or protected via conservation easement). The EPA's determination as to whether to concur will be based, in part, on the USFWS analysis and input.

[1] This MOA assumes that USACE will issue a Record of Decision compliant with the *Endangered Species Act*, *the Clean Water Act* and the *National Environmental Policy Act*.

b. Applicable Laws and Regulations

This MOA is established consistent with the following statutes, regulations, and policies.

1. Section 3 of the *Flood Control Act* of 1941, as amended by the *Flood Control Acts* of 1944 and 1965.
2. *Clean Water Act* Section 404 (33 U.S.C. 1344).
3. Environmental Protection Agency, *Clean Water Act* Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 C.F.R. Part 230).
4. Memorandum of Agreement between the Department of the Army and the Environmental Protection Agency Concerning the Determination of Mitigation under the *Clean Water Act* Section 404(b)(1) Guidelines (February 6, 1990).
5. *National Environmental Policy Act* (42 U.S.C. 4321 et seq.).
6. Council on Environmental Quality, Regulations for Implementing the Procedural Provisions of *National Environmental Policy Act* (40 C.F.R. Parts 1500-1508).
7. *Fish and Wildlife Coordination Act* (16 U.S.C. 661 et seq.).
8. *Endangered Species Act* of 1973, as amended, (16 U.S.C. 1531 et seq.).
9. Section 906 of the *Water Resources Development Act* of 1986, as amended (33 U.S.C. 2283).
10. Section 2036(c) of the *Water Resources Development Act* of 2007, as amended (33 U.S.C. 2317b).
11. Department of the Army, Implementation Guidance for Section 1162 of the *Water Resources Development Act* of 2016 and Section 1040 of the *Water Resources Reform and Development Act* of 2014, Fish and Wildlife Mitigation (Section 906 of the *Water Resources Development Act* of 1986, as Amended (33 U.S.C. 2283)) (March 25, 2019).
12. Engineering Regulation 1105-2-100, Planning Guidance Notebook, Appendix C.
13. Department of the Army, Implementation Guidance for Section 1163 of the *Water Resources Development Act* of 2016, Wetlands Mitigation (March 8, 2019).
14. Fish and Wildlife Service Mitigation Policy (88 Fed. Reg. 31000, 2023).
15. *Endangered Species Act* Compensatory Mitigation Policy (88 Fed. Reg. 31000, 2023).

c. Limitations

This MOA is not legally binding, does not create any contractual obligations and is not enforceable by any party. Nothing in this MOA diminishes or in any way affects the authorities of the USACE, the EPA or the USFWS under these statutes and their implementing regulations. This MOA does not create any right or benefit, substantive or procedural, enforceable by law or equity against any signatory or any of its officers, employees, or other representatives or any person. Nothing in this document obligates the agencies to expend appropriations or enter into any contract, assistance agreement, interagency agreement or incur financial obligations. Further, it is understood that any agency action must be in accordance with applicable laws and regulations. This MOA does not apply to any person outside of the USACE, the EPA and the USFWS.

II. Roles and Responsibilities

a. Project Implementation

The USACE, Vicksburg District is the USACE entity responsible for implementing the Project, including its compensatory mitigation. The Project's FEIS indicates that compensatory mitigation will be provided through District purchase of credits from the Ducks Unlimited Mississippi Delta Program, an in-lieu fee program approved by the District to provide compensatory mitigation for certain environmental impacts that occur in the Mississippi Delta Region. In the event the in-lieu fee program is unwilling or unable to provide sufficient offset, the FEIS describes other compensatory mitigation options that may be pursued including District constructed compensatory mitigation. In the case of District constructed compensatory mitigation, the District would be responsible for all aspects of planning and implementation.

b. Compensatory Mitigation Management Team

The purpose of the CMMT is to facilitate the review, approval and oversight of the Project's compensatory mitigation to help ensure that the Project's unavoidable impacts are effectively offset. The CMMT is jointly led by the District, the EPA and the USFWS. One manager from each of the three agencies serves as a CMMT co-Chair, but multiple members from each agency may participate on the CMMT.

The CMMT will advise the co-Chairs regarding the review of documents prepared by the District in the event that District constructed compensatory mitigation is pursued, including revised draft compensatory mitigation plans, monitoring reports and proposed adaptive management measures. To ensure timely processing of draft District constructed compensatory mitigation plans and other documentation, comments from the CMMT should be received by the co-Chairs within the time limits specified by the co-Chairs. Comments received after these deadlines will only be considered at the discretion of the co-Chairs to the extent that doing so does not jeopardize Project deadlines.

CMMT co-Chairs will coordinate site visits, as needed, to facilitate review of draft District constructed compensatory mitigation plans or proposed modifications to these mitigation plans and oversight of progress at approved District constructed compensatory mitigation project sites.

Following issuance of the Record of Decision and during the Project's design phase, the CMMT will also meet at completion of the Project's 30 percent design, 60 percent design, 90 percent design, 95 percent design and 100 percent design to review the status of compensatory mitigation.

c. Timing of Compensatory Mitigation Plan Approval

Prior to the issuance of the Record of Decision for the Project, compensatory mitigation plans must be approved that fulfill the requirements of all applicable Federal environmental laws, including but not limited to, the *National Environmental Policy Act*, *Clean Water Act*, *Fish and Wildlife Coordination Act*, and Section 906 of the *Water Resources Development Act* of 1986, as amended (33 U.S.C. 2283) (referencing and incorporating 33 C.F.R. 332.4(c) [40 C.F.R. 230.94(c)]). See Appendix 1 of this MOA for implementation guidance, including a description of compensatory mitigation plan contents and Appendix 2 of this MOA for a discussion of key considerations regarding the type and location of compensatory mitigation. Any revisions to these compensatory mitigation plans will be developed and reviewed consistent with this MOA. In all cases, work related to the Project will not commence in waters of the United States until the USACE has obtained concurrence from the EPA on the mitigation plan for each compensatory mitigation component and all in-lieu fee program/mitigation bank credits have been purchased and/or compensatory mitigation sites have been

secured. The EPA's determination as to whether to concur will be based, in part, on the USFWS analysis and input.

d. Monitoring[2]

The District is responsible for monitoring each District constructed compensatory mitigation site in accordance with the approved monitoring requirements to evaluate whether the compensatory mitigation site is meeting performance standards and complying with the terms of the final compensatory mitigation plan, and to identify issues potentially requiring adaptive management measures (see Appendix 1, item 9). Monitoring will be conducted at time intervals appropriate for the particular project type and until such time that the CMMT co-Chairs have determined that performance standards have been attained. Compensatory mitigation plans will include requirements for periodic monitoring reports to be submitted to the co-Chairs, who will provide copies to other CMMT members.

If the co-Chairs determine that a District constructed compensatory mitigation project is not meeting performance standards or complying with the terms of the final compensatory mitigation plan, the District is responsible for implementing adaptive management measures consistent with the *Clean Water Act* and other applicable law, that have been identified by the co-Chairs.

e. Annual Compensatory Mitigation Status Report

The District will provide an annual report to the CMMT co-Chairs that summarizes the status of all compensatory mitigation actions taken to offset unavoidable impacts of the Project. For any in-lieu fee or mitigation bank credits purchased, the report will document the amount and type of credits purchased and the purchase date. For any District constructed compensatory mitigation, the report will summarize the status of each District constructed compensation site (e.g., construction/planting phase, performance monitoring phase, performance standards achieved/long-term management phase), results of performance monitoring and identification of any issues needing adaptive management. Annual compensatory mitigation status reports will be posted to the District's Yazoo Backwater Project website. Production of the annual compensatory mitigation status report will continue until the co-Chairs concur that all necessary in-lieu fee or mitigation bank credits have been purchased and any District constructed compensatory mitigation sites have met performance standards and adequate plans and resources are in place to support effective long-term management of each District constructed compensation site.

f. Dispute Resolution

In the event of a dispute, the agencies shall use their best efforts to resolve that dispute in an informal fashion through consultation and communication. In the event such measures fail to resolve the dispute, the agencies shall elevate the issue through their respective chains of command, as appropriate.

g. Information Sharing

The draft compensatory mitigation plan(s), the final compensatory mitigation plan(s) and other documents prepared or exchanged pursuant to this agreement may contain information subject to the Deliberative Process Privilege, the Attorney-Client Privilege, the Confidential Commercial Information Privilege or other privileges. The agencies intend to assert privileges where appropriate and subject to the limitations of the *Freedom of Information Act*, 5 U.S.C. 552 et seq, or other legal authorities. Should an agency receive a *Freedom of Information Act* or other request for information prepared or exchanged pursuant to this agreement, that

[2] If in-lieu fee program/mitigation bank credits are utilized, the in-lieu fee program or mitigation bank sponsor documents set forth the responsibilities for these third-party arrangements.

agency will timely consult with the other agencies as appropriate to determine the applicability of privileges or exemptions where other agencies have equities in the requested information.

III. Effective Date and Review

This MOA shall become effective upon the date of the last signature of the agencies. This MOA will be reviewed by the agencies ten 10 years from the date of award of the first construction contract for the Project.

Maj. Gen. Kimberly A. Peeples
Commander
Mississippi Valley Division
U.S. Army Corps of Engineers

Jeaneanne M. Gettle
Acting Regional Administrator
Region 4
U.S. Environmental Protection Agency

Mike Oetker
Regional Director
Southeast Region
U.S. Fish and Wildlife Service

Memorandum of Agreement
Appendix 1
Compensatory Mitigation Plans

Pursuant to Section 906 of the *Water Resources Development Act* of 1986, as amended, "to mitigate losses to fish and wildlife resulting from a water resources project, the Secretary shall ensure that the mitigation plan for each water resources project complies with the mitigation standards and policies established pursuant to the regulatory programs administered by the Secretary." (33 U.S.C. 2283(d)(3)(A)). In accordance with Section 906 of the *Water Resources Development Act* of 1986, as amended, the USACE must demonstrate that impacts to all significant ecological resources, both terrestrial and aquatic, have been avoided and minimized to the extent practicable, and any remaining unavoidable impacts have been compensated to the extent possible as discussed in reference 12. Compensatory mitigation plans will address the requirements contained within references 11 and 12 as well as the following items consistent with 33 C.F.R 332.4 [40 C.F.R 230.94] paragraphs (c)(2) through (c)(14). Compensatory mitigation plans will provide information regarding each of these items at a sufficient level of detail to support informed Compensatory Mitigation Management Team comment.[3]

1. Objectives. A description of the resource type and amount that will be provided, the method of compensation (i.e., restoration, establishment, enhancement and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province or other geographic area of interest.

2. Site selection. A description of the factors considered during the compensation site selection process. This should include consideration of watershed needs, on-site alternative where applicable and the practicability of establishing an ecologically self-sustaining aquatic resource restoration, establishment, enhancement and/or preservation at the compensatory mitigation project site. (see for example 33 C.F.R. 332.3 (d) [40 C.F.R. 230.93(d)]).

3. Site protection. A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation site.

4. Baseline information. A description of the pre-project ecological characteristics of the proposed compensatory mitigation site. This may include descriptions of historic and existing plant and animal communities, historic and existing hydrology, soil conditions and a map showing the location of the mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. If securing credits from

[3] Mitigation plans that rely exclusively on securing credits from a mitigation bank or in-lieu fee program to satisfy compensatory mitigation obligations need only address items 4 (Baseline Information, for the impact site) and 5 (Credit Determination) in this list and provide the name of the specific mitigation bank or in-lieu fee program to be used (33 C.F.R. 332.4(c) [40 C.F.R. 230.94(c)]).

an approved mitigation bank or in-lieu fee program, only the baseline information about the impact site is necessary, not the mitigation bank or in-lieu fee project site.

5. Determination of credits. A description of the number of credits to be provided, including a brief explanation of the rationale for this determination. This should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity. If securing credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

6. Mitigation Work plan. Detailed written specifications and work descriptions for the compensatory mitigation project including, but not limited to, the geographic boundaries of the project; construction methods, timing and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; proposed grading plan, including elevations and slopes of substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge and riparian area plantings.

7. Maintenance plan. A description and schedule of maintenance requirements to ensure the continued viability of the compensation site once initial construction is completed.

8. Performance standards. Ecologically-based standards that will be used to determine whether the compensation site is achieving its objectives.

9. Monitoring requirements. A description of parameters monitored to determine whether the compensation site is on track to meet performance standards, and if adaptive management is needed. A schedule for monitoring and reporting monitoring results to the district engineer must be included.

10. Long-term management plan. A description of how the compensation site will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and identification of the party responsible for long-term management.

11. Adaptive management plan. A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success.

12. Financial assurances. A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.

13. Other information. The district engineer may require additional information as necessary to determine the appropriateness, feasibility and practicability of the compensatory mitigation project.

Memorandum of Agreement
Appendix 2
Key Compensatory Mitigation Considerations

Consideration is given to mitigation bank and in-lieu fee programs and U.S. Army Corps of Engineers, Vicksburg District constructed compensatory mitigation in accordance with section 906 of the *Water Resources Development Act* of 1986, as amended (33 U.S.C. 2283) (referencing and incorporating 33 C.F.R. 332.3.(b) [40 C.F.R. 230.93(b)]). Potential Mitigation Planning Strategies are outlined in Section III. This appendix provides an overview of key considerations evaluated in the FEIS[4] regarding the type and location of compensatory mitigation to offset unavoidable impacts associated with the Yazoo Backwater Area Water Management Project.

I. Mitigation Bank and In-Lieu Fee Program Considerations

Consideration must be given to whether the Project's compensatory mitigation requirements can be addressed through the purchase of credits from approved mitigation banks or in-lieu fee programs. This is done by evaluating whether the Project's impacts fall within the service area of an approved mitigation bank or in-lieu fee program and, if so, whether the mitigation bank(s) or in-lieu fee program(s) would have appropriate credits available for purchase at the time of construction and the extent to which these credits would provide sufficient offset for ecological impacts associated with the project.

II. District Constructed Compensatory Mitigation Considerations[5]

Depending upon the results of the evaluation described in Section I, District constructed compensatory mitigation may be necessary to satisfy some or all the Project's compensatory mitigation requirements.

a. General Considerations for Site Selection

To help ensure that District constructed compensatory mitigation adequately offsets unavoidable impacts to wetlands and other aquatic resources, as well as other significant natural resources and species, preference will be given to compensation sites which:

- Replace natural resource functions similar to those lost or degraded as a result of construction and operation of the Project (i.e., in-kind compensatory mitigation). Such compensation sites would be in a similar geomorphic position (e.g., riverine backwater wetlands in the 2- and 5-year floodplains) to areas adversely affected by the Project and would support communities of fish and wildlife species similar to those adversely affected by the Project.
- Provide opportunities to offset impacts to multiple affected natural resources and species.
- Increase the size of and/or improve the connectivity between existing protected lands.
- Re-establish floodplain connectivity where feasible.
- Are large contiguous tracts.[6]

[4] USACE FEIS for the Yazoo Backwater Area Water Management Project, Appendix J-Compensatory Mitigation Plan.
[5] In the *Clean Water Act* Section 404 Regulatory Program, this is known as permittee-responsible compensatory mitigation.
[6] Larger tracts can yield greater ecological benefits (e.g., reduced edge effects) compared to multiple, small, fragmented parcels.

b. Watershed Location

The Project's adverse impacts are concentrated on natural resources in the Yazoo Backwater Study Area, or YSA, in the southern portion of the 080302 U.S. Geological Survey Hydrologic Unit Code watershed (Figure 1). Because the Project's adverse impacts are concentrated in the YSA, preference will be given to large sites within the YSA with restoration potential that will not experience alterations in flood frequency and duration from the Project. If suitable sites are not found within the YSA, sites may also be located in areas outside the YSA in the same 6-digit HUC watershed (i.e., 080302 – the Yazoo River Basin) and within the Mississippi Alluvial Plain Level III Ecoregion (Figure 1),[7] provided such sites are consistent with the considerations identified in Section II.a. Prioritizing areas outside of the YSA but within the 080302 HUC watershed and within the Mississippi Alluvial Plain Level III Ecoregion can yield benefits to ecological resources and communities located downstream in the YSA.

c. Consideration of Other Locations in the Lower Mississippi River Alluvial Valley

If the required mitigation cannot be completed within the YSA or other portions of the 080302 HUC watershed within the Mississippi Alluvial Plain Level III Ecoregion, adjacent watersheds within the Lower Mississippi River Alluvial Valley with the natural resource types found in the Project impact area will be considered. For example, as discussed below, riverine backwater wetlands have been mapped across the Valley (Figure 2) and provide habitat for similar communities of fish and wildlife species. Thus, a restored riverine backwater wetland in an adjacent watershed could potentially offset Project impacts to wetlands and other aquatic resources, as well as fish and wildlife species and their habitats. Considering these factors, potential compensation sites may also be within the portions of the 080402, 080500 and 080601 HUC watersheds within the Mississippi Alluvial Plain Level III Ecoregion (Figure 1) at locations that provide in-kind compensatory mitigation consistent with the considerations identified in Section II.a. This potentially includes mitigation bank sites and in-lieu fee program project sites located within the same geographic area that are consistent with the considerations identified in Section II.a. Consideration will also be given to batture areas consistent with the considerations identified in Section II.a. If it is determined that mitigation must take place outside of the YSA or other portions of the 080302 HUC watershed within the Mississippi Alluvial Plain Level III Ecoregion, justification detailing the rationale for undertaking the mitigation in a different watershed will be developed. Coordination will also be needed with the Mississippi Department of Environmental Quality regarding the water quality certification.

III. Strategies for Identification of Potential Restoration Sites

Existing watershed and restoration plans may be helpful in identifying and prioritizing potential compensatory mitigation sites. For example, compensatory mitigation sites could supplement existing Watershed Implementation Plans (e.g., Deer Creek Watershed Implementation Plan[8]) or be priority areas identified in existing Restoration Plans (e.g., Mississippi State Wildlife Action Plan[9] or the Lower

[7] Ecoregions are areas where ecosystems (and the type, quality and quantity of environmental resources) are generally similar and are commonly used, in addition to watersheds, to inform decisions regarding how to appropriately locate compensatory mitigation sites (33 C.F.R. 332.8(d)(6)(ii)(A) [40 C.F.R. 230.98(d)(6)(ii)(A)]).

[8] MDEQ. 2008. Deer Creek Watershed Implementation Plan. Mississippi Department of Environmental Quality. Jackson, Mississippi.

[9] Mississippi Museum of Natural Science. 2015. Mississippi State Wildlife Action Plan. Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science, Jackson, Mississippi. Available online: https://www.mdwfp.com/media/251788/mississippi_swap_revised_16_september_2016__reduced_.pdf.

Mississippi River Resource Assessment[10]). Existing restoration or conservation projects may provide helpful planning assistance, but mitigation credit cannot be generated through another federally funded program.

Geographic Information System mapping tools may also be helpful in identifying and prioritizing potential restoration sites. One existing GIS mapping tool available is the Potential Natural Vegetation of the Mississippi Alluvial Valley[11] mapping effort which has identified the extent of various Hydrogeomorphic subclasses using remote sensing data and field data (Figure 2). The Potential Natural Vegetation atlases cover more than 26,000 square miles in the Mississippi Alluvial Valley and are intended to guide restoration planning and prioritization by providing information about restoration potential to a suite of Hydrogeomorphic subclasses. These atlases can be used to help identify priority areas for riverine backwater wetland restoration. Another potentially useful GIS mapping tool are the forest breeding bird reforestation and protection priorities maps developed by the Lower Mississippi Valley Joint Venture.[12]

Where species-specific compensatory mitigation is needed (e.g., areas that do not overlap with *Clean Water Act* Section 404 resources), and where a more precise classification of habitat is needed, other remote sensing tools could be used for site prioritization. For example, the National Terrestrial Ecosystems[13] data provides detailed information about vegetation and land use, obtained by Landsat satellite imagery.

[10] U.S. Army Corps of Engineers, Mississippi Valley Division/Engineer Research and Development Center-Environmental Laboratory. 2015. Lower Mississippi River Resource Assessment. Available online: https://www.lmrcc.org/wp-content/uploads/2021/01/LMRRA_Final-Assessment-Public_reduced.pdf.

[11] Potential natural vegetation of the Mississippi Alluvial Valley. 2013. Vicksburg, MS: U.S. Fish and Wildlife Service, Lower Mississippi Valley Joint Venture. Available online: https://databasin.org/maps/0f736670a2a84d4a868b65fce3301a6e/.

[12] Reforestation Decision Support for Breeding Birds, Lower Mississippi Valley Joint Venture. Available online: https://www.lmvjv.org/mav-breedingbird.

[13] USGS Gap Analysis Project (GAP), 2016, GAP/LANDFIRE National Terrestrial Ecosystems 2011: USGS data release, https://doi.org/10.5066/F7ZS2TM0.

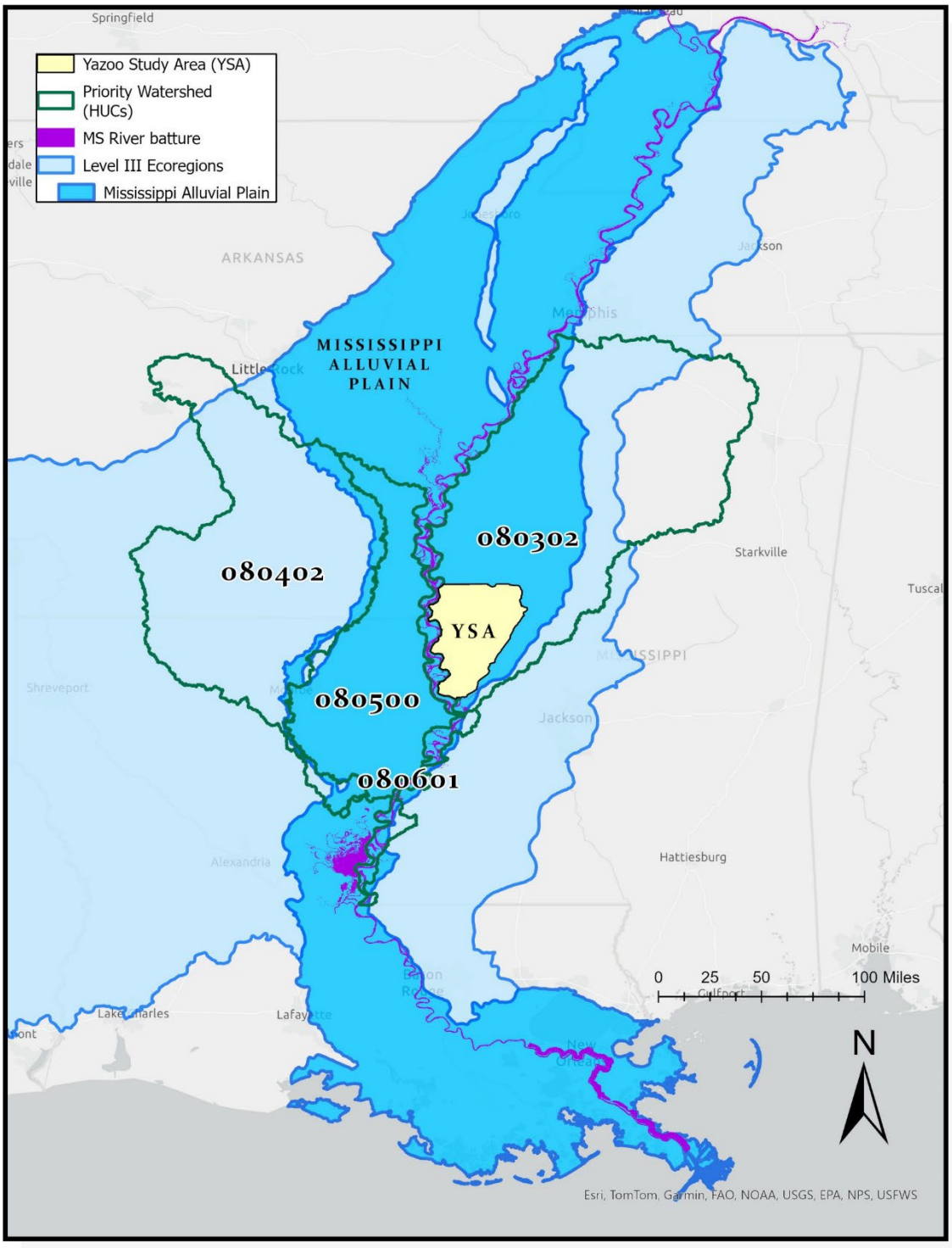

Figure 1. The Yazoo Backwater Study Area is situated in the Lower Mississippi Region (HUC 08), within the southern portion of the Yazoo River Basin (HUC 080302) and within the Mississippi Alluvial Plain Level III Ecoregion.

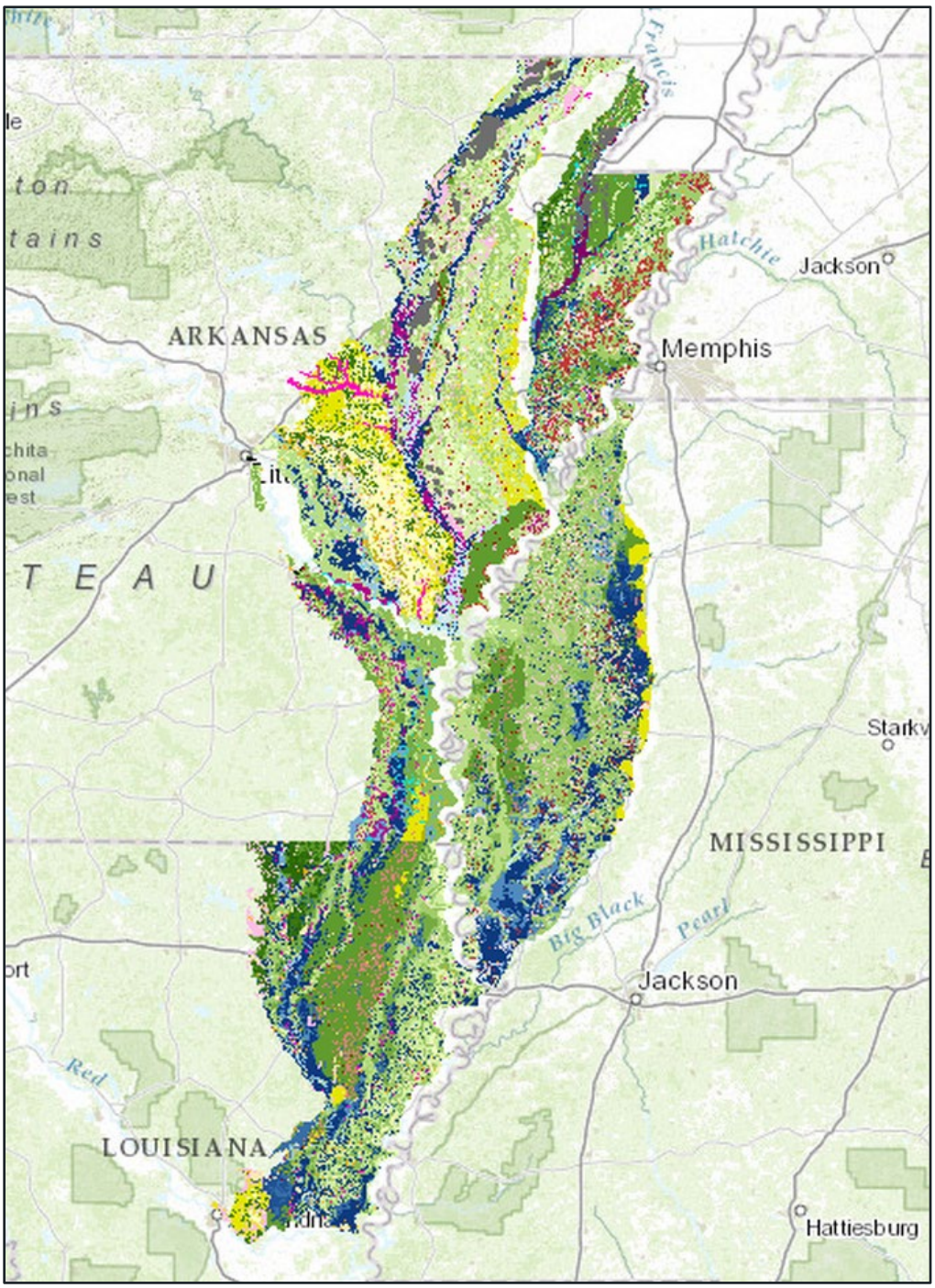

Figure 2. The Potential Natural Vegetation atlases can help determine which sites can be restored to high-functioning riverine backwater wetlands (areas in blue).